

SAP Business Warehouse/Business Intelligence Reporting

BW/BI Architecture

Washington State HRMS Business
Warehouse/Business Intelligence (BW/BI)

Self-Paced Learning Materials

General Topics - BW/BI End Users/Power Users

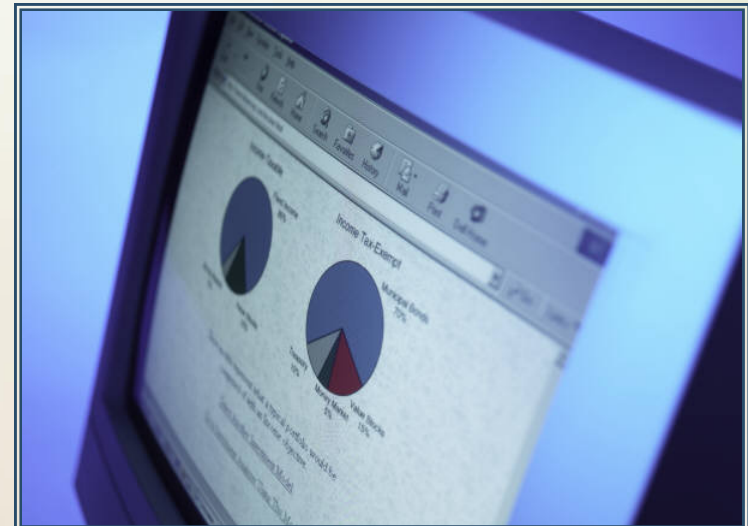
BW/BI Architecture - Overview

The BW/BI Architecture section provides an overview of the basic structure of the Business Intelligence (BW/BI).

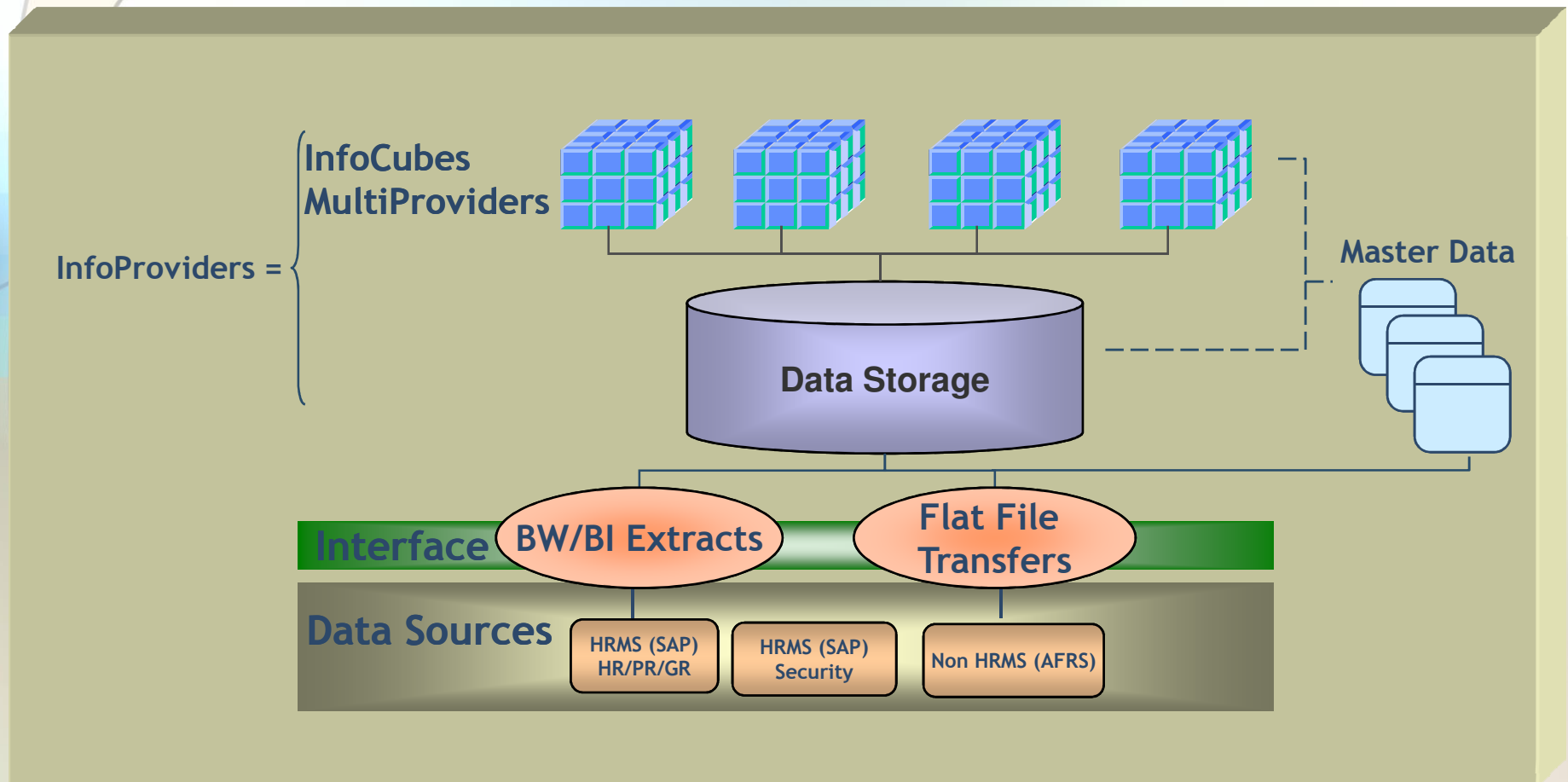
i Some topics cover advanced concepts and provide information for understanding data as it relates to the underlying BW/BI structures.

Topics covered in this section include:

- BW/BI Architecture
- BW/BI InfoProviders
- BW/BI InfoCube Conceptual Model
- BW/BI Key Figures and Characteristics
- BW/BI Master Data and InfoProviders
- BW/BI InfoProvider List
- BW/BI InfoProvider / Master Data Updates
- Schedule of BW/BI InfoProvider Updates
- Schedule of BW/BI Master Data Updates



The following diagram provides a high level view of the architecture of the Business Intelligence and how data is retrieved and stored:

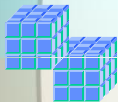


BW/BI InfoProviders

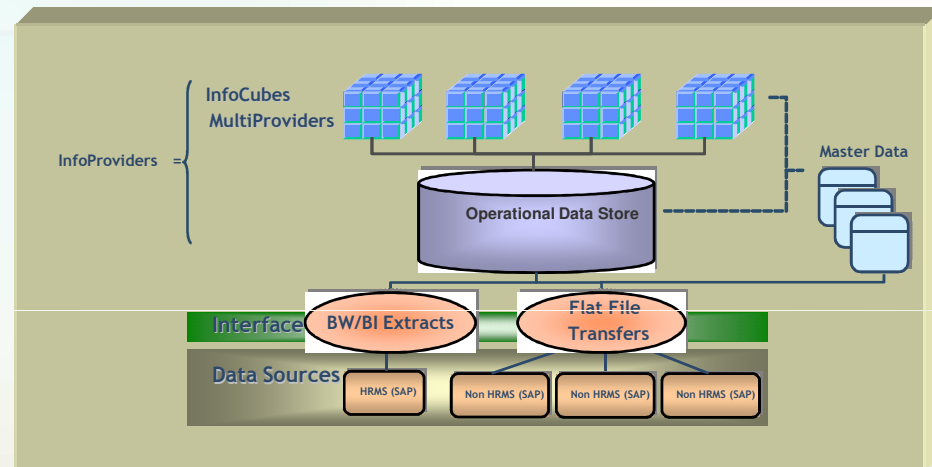
An InfoProvider is a data object used to create queries and reports. InfoCubes and MultiProviders are types of InfoProviders.



➤ **InfoCube** - data object containing multi-dimensional data. InfoCubes contain InfoObjects (data fields) such as Key Figures and Characteristics that can be used to build BW/BI reports.



➤ **MultiProvider** - connects data from two or more InfoProviders. The MultiProvider is a view of the InfoProviders on which it is based.

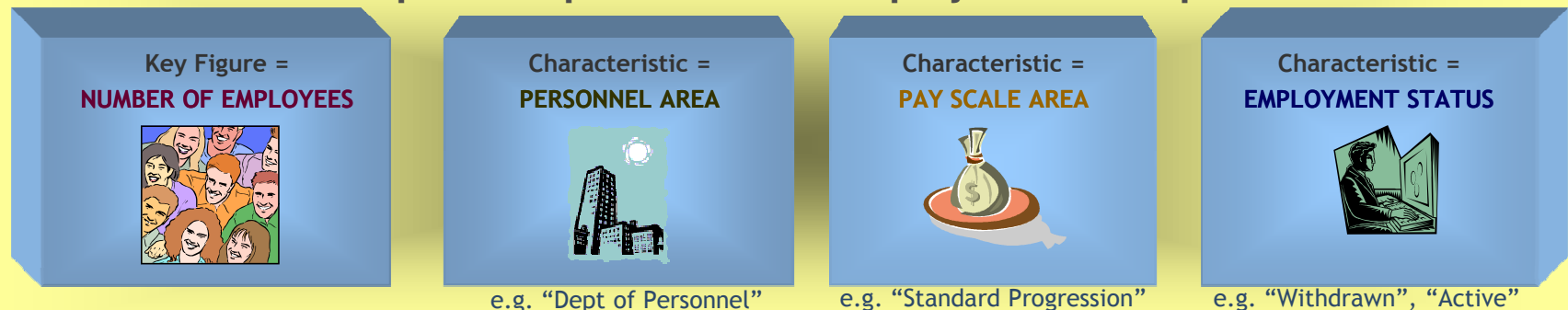


BW/BI Key Figures and Characteristics

BW/BI Reports are developed using data within InfoProviders that are comprised of:

- **Key Figures** - Numeric fields that are the object of analysis in BW/BI reports, such as number of employees, number of positions, annual salary, etc. Key Figures quantify the Characteristics.
- **Characteristics** - Descriptive fields that provide context for the key figures in BW/BI reports. Characteristics describe the Key Figures.

Example: Composition of an employee count report



Employee Count				
Display As Table Information Send Print Version Export to Excel Comments				
▼ Columns	Personnel Area ⇅	Pay Scale Area ⇅	Employment Status ⇅	Number of Employees ⇅
▪ Key Figures	Dept of Personnel	10/01	Standard Progression	Withdrawn
▼ Rows			Active	106
▪ Personnel Area			Result	148
▪ Pay Scale Area		Result		148
▪ Employment Status				148
▪ Free characteristics				
	Overall Result			148

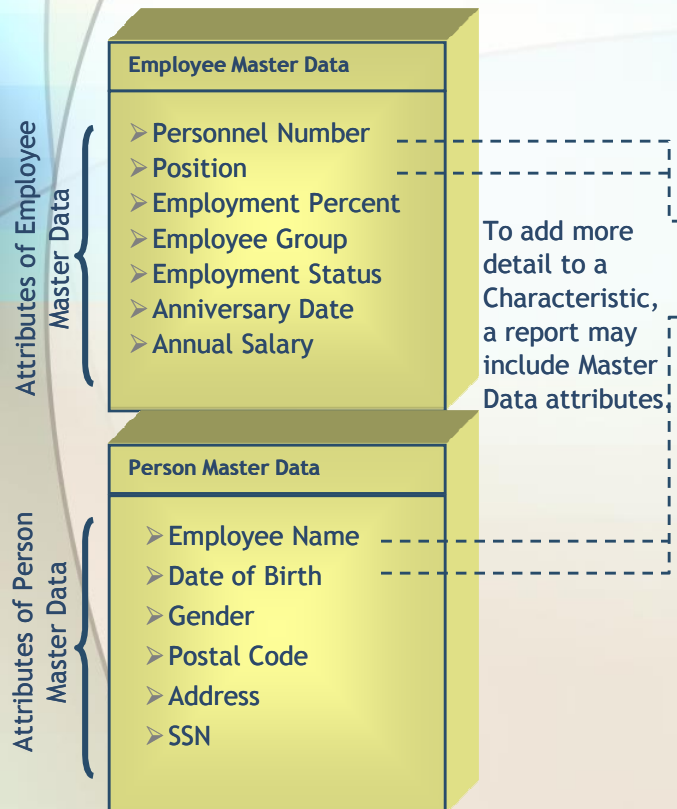
BW/BI Report Results

BW/BI Master Data and InfoProviders

The following illustration describes the Master Data and InfoProvider relationship as it relates to an InfoCube:

Master Data:

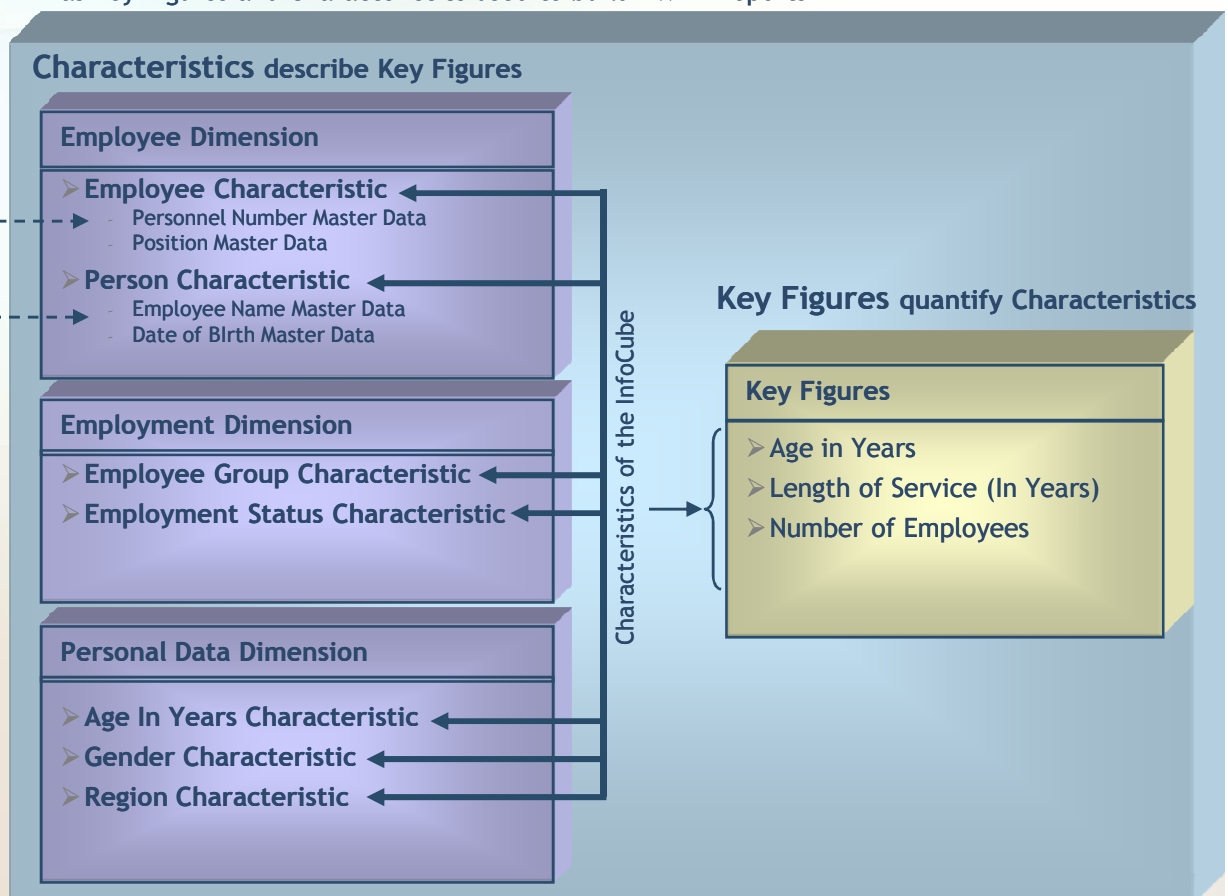
Data that provides more detail for Characteristics that reside in an InfoProvider



To add more detail to a Characteristic, a report may include Master Data attributes.

InfoCube:

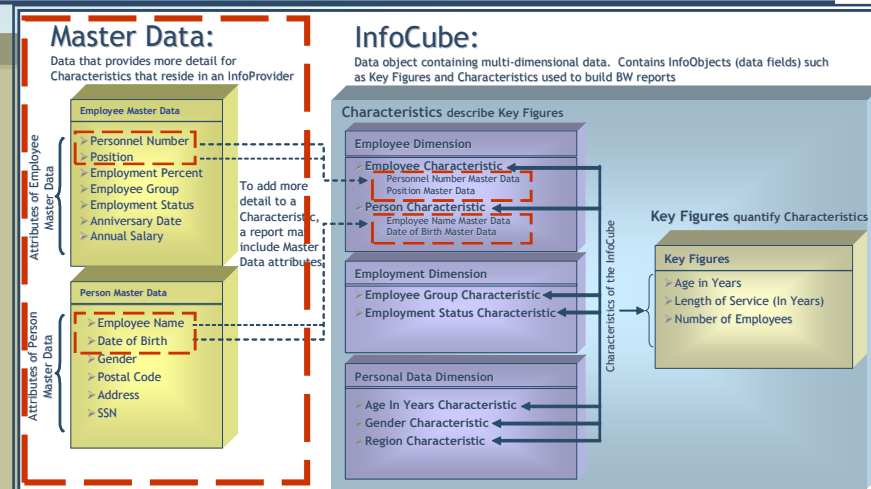
Data object containing multi-dimensional data. Contains InfoObjects (data fields) such as Key Figures and Characteristics used to build BW/BI reports



Continued...

Master Data

- Master Data is data that provides more detail for Characteristics that reside in an InfoProvider. For example, *Personnel Number* and *Position* are Master Data that describe the *Employee* Characteristic. *Employee Name* and *Date of Birth* are Master Data that describe the *Person* Characteristic.
- **Master data typically remains unchanged over a long period of time** and is loaded and stored in Master Data tables, independent of InfoProviders.

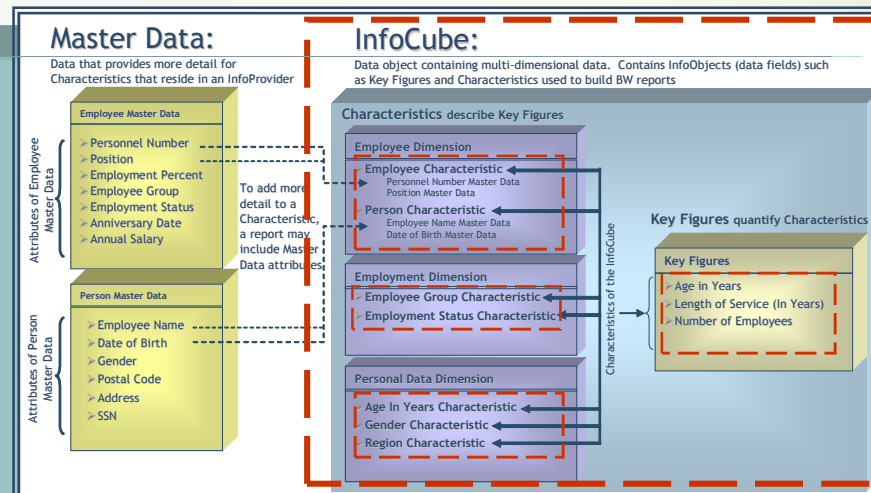


InfoProviders

- InfoCubes and MultiProviders are types of InfoProviders.
- InfoProviders consist of Key Figures and Characteristics.
 - **Characteristics** - exist in the InfoProviders and are objects that describe the Key Figures.
 - **Key Figures** - exist in the InfoProviders and are statistics and numbers that quantify characteristics.

For example, the Key Figure *Number of Employees* summarizes the Characteristic *Gender* the following way:

Females: 25,250 Employees
Males: 28,876 Employees



Note: Master Data and InfoProviders may have different update schedules. Refer to the *Schedule of BW/BI InfoProvider/ Master Data Updates* section for more information.

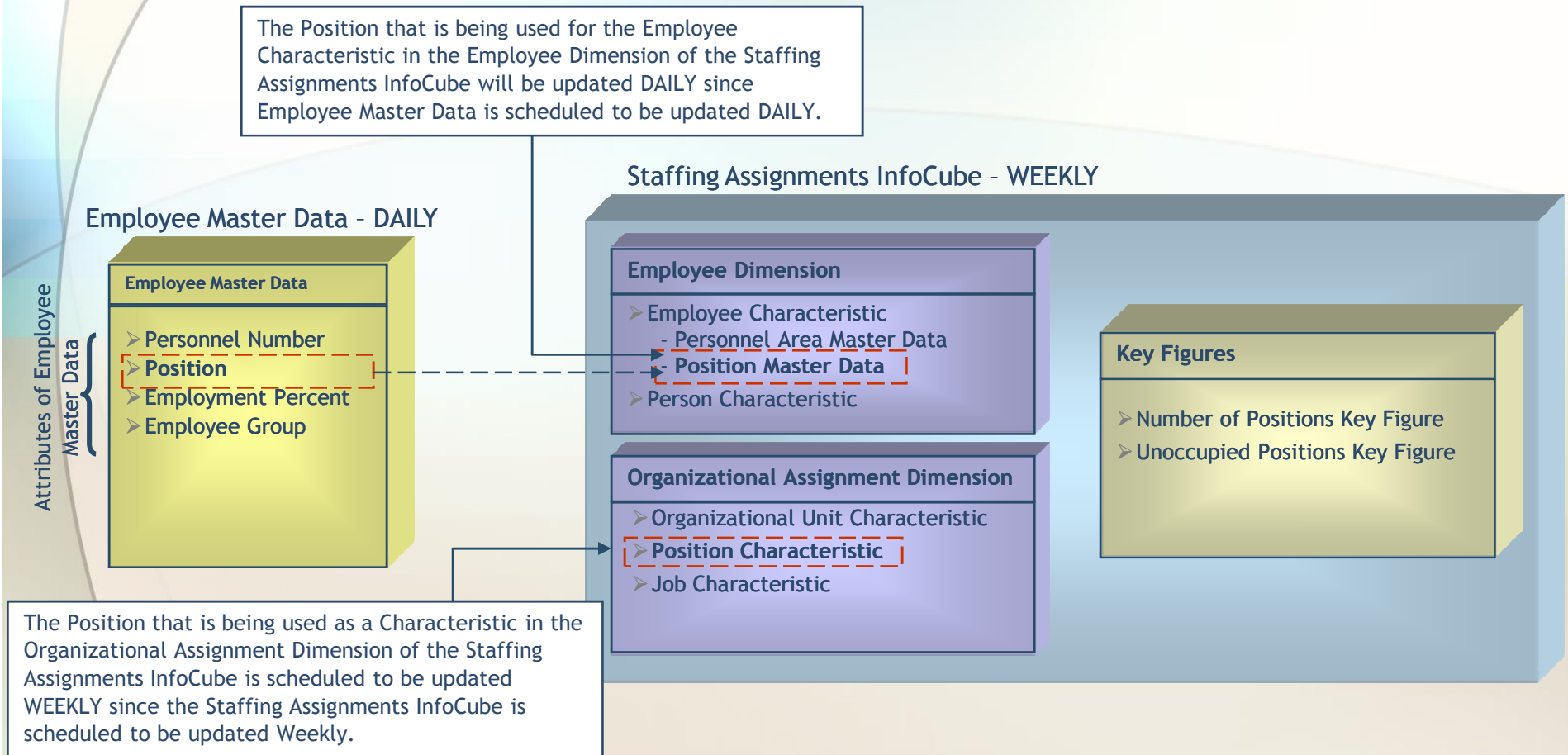
BW/BI InfoProvider List

The table below lists BW/BI InfoProviders with examples of how the InfoProvider might be used:

InfoProvider	InfoProvider Type	Example of Use
AFRS Payroll Accounting Data (ZPY_C51)	InfoCube	➤ Employee and Position level Payroll and Financial information provided by AFRS
Employee Specific Payroll Data (ZPY_M01)	MultiCube	➤ Wage types by Personnel Area and/or Employee ➤ Employee count by Wage Type
Employee Specific Payroll Data with PA (ZPY_M02)	MultiCube	➤ Wage types by Personnel Area and/or Employee ➤ Personnel Action data.
Headcount and Education (ZPA_M50)	MultiCube	➤ Number of records by Educational Establishment, Certificate and Education/Training ➤ Employee list by Educational Establishment, Certificate and Education/Training
Headcount and Personnel Actions (ZPA_C01)	InfoCube	➤ Summary level employee counts by demographic areas such as Gender, County Code, Employee Group, etc. ➤ Detail level employee counts by employee specific information. ➤ Employee count/list by personnel Action Type or Action Reason.
Quota Data (ZPT_M02)	MultiCube	➤ Quota accrual and balances by Personnel Area and/or Employee
Staffing Assignments (ZPAOS_C01)	InfoCube	➤ Position count by Organizational Unit and/or Job Class ➤ Position list by Organizational Unit and/or Job Class
Time and Labor (ZPT_M01)	MultiCube	➤ Time balances and accruals by Personnel Area and/or Employee
Grievance Data (ZGR_M01)	MultiCube	➤ Grievance data by to Master Agreement and/or Business Area.

BW/BI InfoProvider/Master Data Updates

While an InfoProvider may be updated weekly, Master Data that is being referenced in the InfoProvider may be updated daily. The following illustration provides an example of different update frequencies for InfoProviders and Master Data, using the Staffing Assignments InfoCube as an example.



Schedule of BW/BI InfoProvider Updates

The following table provides an overview of the data load frequency for BW/BI InfoProviders:

InfoProvider	Update Frequency	Data Load Schedule
AFRS Payroll Accounting Data (ZPY_C51)	Daily (note: AFRS Payroll Accounting Transactional Data will be updated when an adjustment has been made and a new AFRS file is available. If no adjustments have occurred, AFRS Payroll Accounting Transactional Data will be updated after the next payroll exit)	Daily
Headcount and Personnel Actions (ZPA_C01)	Daily	Daily
Headcount and Education (ZPA_M50)	Monthly	1 st Friday/mo*
Staffing Assignments (ZPAOS_C01)	Weekly	Friday
Grievance (ZGR_M01)	Weekly	Friday
Employee Specific Payroll Data (ZPY_M01)	Semi-Monthly	After Payroll Exit
Time and Labor (ZPT_M01)	Semi-Monthly	After Payroll Exit
Quota Data (ZPT_M02)	Monthly	1 st Friday/mo*



Note: BW/BI data loads are on an automated schedule. Loads are scheduled to occur between 6pm and 6am.

*In the months that HRMS Payroll processing is scheduled to occur over the first Friday of the month, the BW/BI load will be rescheduled. Usually for the second Friday of the month.

Schedule of BW/BI Master Data Updates

The following table provides an overview of the data load frequency for BW/BI most commonly used Master Data.

Master Data	Update Frequency	Data Load Schedule
Employee	Daily	Daily
Person	Daily	Daily
Company Code	Weekly	Friday
Contract Type	Weekly	Friday
Job	Weekly	Friday
Org Unit	Weekly	Friday
Pay Grade Level	Weekly	Friday
Pay Grade Level To	Weekly	Friday
Pay Scale	Weekly	Friday
Pay Scale Level	Weekly	Friday
Pay Scale Level To	Weekly	Friday
Position	Weekly	Friday